

Abstract

5 A fiberoptic system for communicating between a
central office and a downstream station, wherein the
central office has a TX unit, an RX unit and a
continuous wave ("CW") laser, and each station has an
RX unit and a tunable filter. The downstream station's
tunable filter is placed between its RX unit and the
central office. During downstream transmission, the
station's tunable filter is tuned to the wavelength of
the central office's TX unit so that the signal
transmitted by the central office will pass through the
filter and be received by the station's RX unit.
During upstream transmission, the station's tunable
filter is selectively tuned to a wavelength different
than the wavelength of the central office's CW laser,
so that the station's tunable filter will selectively
reflect light from the CW laser back to the central
office. By selectively tuning the station's tunable
filter, the tunable filter can be used to modulate the
light being reflected back to the central office,
whereby to effectively create an upstream transmission
from the downstream station to the central office.

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